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RAW SEQUENCE LISTING   DATE: 03/27/2001
PATENT APPLICATION: US/09/490,609B   TIME: 07:45:50

Input Set : **A:\3170SeqList.txt**
Output Set: **N:\CRF3\03272001\I490609B.raw**

```
1  <110> APPLICANT: Bunch, Roderick T.
2         Morris, Dale L.
3         Curtiss, Sandra W.
4         Rodi, Charles P.
6  <120> TITLE OF INVENTION: BIOMARKERS AND ASSAYS FOR CARCINOGENESIS
8  <130> FILE REFERENCE: 3170/00/PCT
10 <140> CURRENT APPLICATION NUMBER: US/09/490,609B
11 <141> CURRENT FILING DATE: 2000-01-25
13 <150> PRIOR APPLICATION NUMBER: US 60/118 078
14 <151> PRIOR FILING DATE: 1999-01-29
16 <160> NUMBER OF SEQ ID NOS: 580
19 <210> SEQ ID NO: 1
20 <211> LENGTH: 271
21 <212> TYPE: DNA
22 <213> ORGANISM  Rattus norvegicus
24 <400> SEQUENCE  1
26 gatcoaccta acaagaagcc caaagtctag acgtcgcctt ttgcctgtga tgatttggta    60
28 ctgcagggta gccagcgtct gtctgatact aagtggtaaa tgaactacgt gtttttatgg   120
30 gaaagaaaaa tatttttgta atcatcaaat ttatactagc tatctgggtg ttagcatatc   180
32 tagttattat gagtctagaa taattttttac atattttttat attattgtcc tctcagttac   240
34 tgaatggatg gaaaacaatc atgttggttt a                                    271
37 <210> SEQ ID NO: 2
38 <211> LENGTH: 206
39 <212> TYPE: DNA
40 <213> ORGANISM  Rattus norvegicus
42 <400> SEQUENCE  2
44 gatccaagac cctcactgac tccgtctgaa ttttttggttt cagtttggta cccgaagctg    60
46 cgcgtcgcgt ctgcttatta cttgtttgac tgttggaatt gtttgtcttc tttgtgacct   120
48 gactgtgctt ttctggacgt gttgtgtctg ttagtgtctt tttgactttt gtttcgtgtt   180
50 tgaattggga ctgacgactg tgttta                                        206
53 <210> SEQ ID NO: 3
54 <211> LENGTH: 74
55 <212> TYPE: DNA
56 <213> ORGANISM: Rattus norvegicus
58 <400> SEQUENCE: 3
60 gatccatgat actgcatgtc agattttcat gtgaatattc tgattgttcg atgttgtttg    60
62 cctgttttttg ttta                                                      74
65 <210> SEQ ID NO: 4
66 <211> LENGTH: 207
67 <212> TYPE: DNA
68 <213> ORGANISM: Rattus norvegicus
70 <400> SEQUENCE: 4
72 gatccatggt caaacaatac cgagtgatgg agacattttc acttttacga gacgtgaacc    60
74 tattggggtg tgtagccaaa tcatcccttg gaattttcca ctgcttatgt tcatttggaa   120
76 gatauccctg ccctcagctg tgggaacaca gtggtcgtca agccagcaga gcaaactcct   180
78 ctcactgctc ttcacatggc atcttta                                        207
81 <210> SEQ ID NO: 5
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RAW SEQUENCE LISTING   DATE: 03/27/2001
PATENT APPLICATION: US/09/490,609B   TIME: 07:45:50

Input Set : A:\3170SeqList.txt
Output Set : N:\CRF3\03272001\I490609B.raw

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 82 <211> LENGTH: 147
 83 <212> TYPE: DNA
 84 <213> ORGANISM: Rattus norvegicus
 86 <400> SEQUENCE: 5
 88 gatccacaat gggcagaagt tagtggttcc caggattgct gggagcatgg cactgtcaaa    60
 90 tcactaccgc tctgaagatt tattagacgt tgacactgct gccgggaggat tcagcagaga   120
 92 cagggactga actactgtct cccttta                                       147
 95 <210> SEQ ID NO: 6
 96 <211> LENGTH: 366
 97 <212> TYPE: DNA
 98 <213> ORGANISM: Rattus norvegicus
100 <220> FEATURE
101 <221> NAME/KEY: unsure
102 <222> LOCATION: (1)..(366)
103 <223> OTHER INFORMATION: unsure at all n locations
105 <400> SEQUENCE: 6
107 gatccatggt ctcagagatt ccagagaaga aagcgatgga aatcgctgag gcttttggca    60
```
W-->
```
109 gaattcctcn agacggtcct gtggcngcta caccngggaa ctagaccatc gaaccttgca   120
111 aagaicacia ttcttgtcaa atggctaccc caaaacgatc tgcttggtca tccaaaggct   180
113 cgggcgttca tcacacactc ncggttccca tggtatttat gaaggaatat gcaatggggt   240
115 tcccaatggt gatgatgccc ttgtttggtg atcagatgga caacgccaag cgcatggaaa   300
117 ctcgaggagc tgggtgacc ctgaatgtcc tgaaaatgac tgccgatgat ttggaaaacg   360
119 ccctta                                                              366
122 <210> SEQ ID NO: 7
123 <211> LENGTH: 156
124 <212> TYPE: DNA
125 <213> ORGANISM: Rattus norvegicus
127 <220> FEATURE
128 <221> NAME/KEY: unsure
129 <222> LOCATION: (1)..(156)
130 <223> OTHER INFORMATION: unsure at all n locations
132 <400> SEQUENCE: 7
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W--> `134 gatccactga agncatcctt gaccgatagg natcaccccg gacttcgatg caccagaggg    60`
W--> `136 cgcaaagcat gagggctggg agaggaccnn ggtgtttgcc tggccagtgt gaagcagtca   120`
```
138 caaggaggtg actggacaaa ctagcatgtg gcctta                             156
141 <210> SEQ ID NO: 8
142 <211> LENGTH: 103
143 <212> TYPE: DNA
144 <213> ORGANISM: Rattus norvegicus
146 <400> SEQUENCE: 8
148 gatccaggca acttgggaga atatgacgct agtatcataa acagggtgcc aggaaaatcc    60
150 actattacca aacattccaa tgactcctat agctgttgcc tta                     103
153 <210> SEQ ID NO: 9
154 <211> LENGTH: 127
155 <212> TYPE: DNA
156 <213> ORGANISM: Rattus norvegicus
158 <220> FEATURE:
159 <221> NAME/KEY: unsure
160 <222> LOCATION: (1)..(127)
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RAW SEQUENCE LISTING   DATE: 03/27/2001
PATENT APPLICATION: US/09/490,609B   TIME: 07:45:50

Input Set : A:\3170SeqList.txt
Output Set: N:\CRF3\03272001\I490609B.raw

```
      161 <223> OTHER INFORMATION: unsure at all n locations
      163 <400> SEQUENCE: 9
      165 gatccaaaag ttcttcaggc aacacgtcct tcagtctgga ggctaactct aaatagtgtg      60
W--> 167 accatgtang acagagtaaa gggcagggag tgaattagag aagaagttgg aattggtctg     120
      169 gggatta                                                              127
      172 <210> SEQ ID NO: 10
      173 <211> LENGTH: 400
      174 <212> TYPE: DNA
      175 <213> ORGANISM: Rattus norvegicus
      177 <220> FEATURE
      178 <221> NAME/KEY: unsure
      179 <222> LOCATION: (1)..(400)
      180 <223> OTHER INFORMATION: unsure at all n locations
      182 <400> SEQUENCE: 10
      184 gatc aaaag gattggccga tcagtttcta ttcgaatatt ccagcaatta cggacaagct      60
W--> 186 cntctgccac ttttagttgg gttacaccaa gagttatctc tctatggtcg gctcctgctg     120
      188 tacttctgca aaaccaactg tgtgcttttt gaaggagaga ctccagatga aacagttatc     180
      190 acttctcacc actatgtcaa acagagtctg ctcacaatat gctgcatatg gaaaggagaaa     240
      192 atcaaggatg agccatctca taaaactagc ccaaaaagta ccaactgcta acctggagga     300
      194 tgtttgcca ctcgctgaag acctactga aatcctgtcc agatgttgta agtctacctc     360
      196 agaagactgc atggccagag agctgcctga acacacatta                          400
      199 <210> SEQ ID NO: 11
      200 <211> LENGTH: 57
      201 <212> TYPE: DNA
      202 <213> ORGANISM: Rattus norvegicus
      204 <400> SEQUENCE: 11
      206 gatccagaaa cttctgctaa gacttcttca atggaaaaga gctgaataag agcatta        57
      209 <210> SEQ ID NO: 12
      210 <211> LENGTH: 231
      211 <212> TYPE: DNA
      212 <213> ORGANISM: Rattus norvegicus
      214 <220> FEATURE
      215 <221> NAME/KEY: unsure
      216 <222> LOCATION: (1)..(231)
      217 <223> OTHER INFORMATION: unsure at all n locations
      219 <400> SEQUENCE: 12
      221 gatccccagt ttcatcagtg tccctgtagc tttctgcagc actcttggc tggacagagc      60
W--> 223 tcctggaaac atttcaaaag atcactnccc ttaccctgcc cttccttggg gtccacctgg     120
      225 tactccagtg ggattgcaca agaatgtctg tgcagaagca aagacagcct ttttaccagt     180
      227 gtggccaaag ccttcacaca tacgggtacc tgttttacac tgtgatgttt a              231
      230 <210> SEQ ID NO: 13
      231 <211> LENGTH: 295
      232 <212> TYPE: DNA
      233 <213> ORGANISM: Rattus norvegicus
      235 <220> FEATURE
      236 <221> NAME/KEY: unsure
      237 <222> LOCATION: (1)..(295)
      238 <223> OTHER INFORMATION: unsure at all n locations
      240 <400> SEQUENCE: 13
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                        RAW SEQUENCE LISTING            DATE:  03/27/2001
                        PATENT APPLICATION:  US/09/490,609B    TIME:  07:45:50

                          Input Set : A:\3170SeqList.txt
                          Output Set: N:\CRF3\03272001\I490609B.raw


        242 gatcccacag cacagttgcc ttttgaacaa cacaagttgc tgcagcattt gaaacaccaa    60
        244 cagcagtgca tacgaacaag atagtgqcaa gggccatgcc aagccttcac cttccaaggg   120
W--> 246 ctaaataggc caccaagtga cagcaaaatg gtgccaaagn tctactacag cactgctaag   180
        248 aaccaacagc tgagaaaccc gatagcttct gacctagagt gcacacacct aagtcctcaa   240
        250 ctggaccttg atagccaaca aatgggagca gtgtcttgtc tcttttagcac cttta          295
        253 <210> SEQ ID NO: 14
        254 <211> LENGTH: 188
        255 <212> TYPE: DNA
        256 <213> ORGANISM: Rattus norvegicus
        258 <400> SEQUENCE: 14
        260 gatcccggag gccgaggcta gagactattc tgtcactcct ggtatccctt caqaagttgc    60
        262 ctgttcgatt gcctgaagga gaagcactgc agtgtttgac agagcgtgct atgagttggc   120
        264 aagatagagc acgacaagct ttagccacag atgaactgtc ttctgccctg gccaaactct   180
        266 ctgtcttta                                                             188
        269 <210> SEQ ID NO: 15
        270 <211> LENGTH: 194
        271 <212> TYPE: DNA
        272 <213> ORGANISM: Rattus norvegicus
        273 <400> SEQUENCE: 15
        276 gatccccttt cccagtgata cccagatttg atttgattgc ccgttttggt ccatgttggt    60
        278 atagttgga atggtgagca atatgagaga accatgtttt ctctcaggac acttttctgtg   120
        280 ctgggqtgagc acaggctgtc atgccagca tagqtgctcg ctctgctaca ctagtccttc   180
        282 aaagtcgtgg ctta                                                        194
        285 <210> SEQ ID NO: 16
        286 <211> LENGTH: 164
        287 <212> TYPE: DNA
        288 <213> ORGANISM: Rattus norvegicus
        290 <220> FEATURE
        291 <221> NAME/KEY: unsure
        292 <222> LOCATION: (1)..(164)
        293 <223> OTHER INFORMATION: unsure at all n locations
        295 <400> SEQUENCE: 16
W--> 297 gatccngact gagaagagtn tcaacacggt cccctacata gtgggcttca acaagcaaga    60
        299 gtttggctgg atcattccaa cgatgatggg aaatctactc tctgaaggca gaatgaatga   120
        301 gaaaatggcc agttcttct tgaagaggtt cagccctaac ctta                       164
        304 <210> SEQ ID NO: 17
        305 <211> LENGTH: 43
        306 <212> TYPE: DNA
        307 <213> ORGANISM: Rattus norvegicus
        309 <220> FEATURE
        310 <221> NAME/KEY: unsure
        311 <222> LOCATION: (1)..(43)
        312 <223> OTHER INFORMATION: unsure at all n locations
        314 <400> SEQUENCE: 17
W--> 316 gatccctgag atgccctaga tcaatgncat gactatgaca tta                        43
        319 <210> SEQ ID NO: 18
        320 <211> LENGTH: 426
        321 <212> TYPE: DNA
        322 <213> ORGANISM: Rattus norvegicus
```

RAW SEQUENCE LISTING   DATE: 03/27/2001
PATENT APPLICATION: US/09/490,609B TIME: 07:45:50

Input Set : A:\3170SeqList.txt
Output Set: N:\CRF3\03272001\I490609B.raw

```
724 <400> SEQUENCE  18
726 gatccgtggc ccatgagaac acatccaatg ctgagacctg tggaggagtc agcaactggg   60
728 attgtaaggga tcagcaggt tagaccacat gggagctgtag ctggccacag ctaagactca  120
730 gaagaccata gggctgcacg aggatgtcag tcatatgtcac agaatggatt tgaacactct  180
732 gtagtggact gtgtacggct aaacacaggg actcttctac aaccaggggaa tgctgtagct  240
734 gttctctgttg aagggccacac ccctgagtgt ccagtccttc cctgggctcc tcatatgaga  300
736 gctatgcatt gtctgatgtg gtgaccctgc agggacagcc cttgttctt gacagccaca  360
738 gccttcagtg agcctggatt tcctgtgtgc tttcctaggga agttctccct ggatgactgc  420
740 tggtta  426
743 <210> SEQ ID NO: 19
744 <211> LENGTH: 212
745 <212> TYPE: DNA
746 <213> ORGANISM  Rattus norvegicus
748 <400> SEQUENCE  19
750 atccgttttg tccgcgaggg aaacagagcc gttgaccatg gttgcaacgg gcagtttgag   60
752 cagtgagaac acggcgcaaca tttcaggagtt gctggacggt ggctctcacc ctgggagtct  120
754 gctatgtgat ttcgactact gggattatgt cgtccccgag cccaacctca acgaggtggt  180
756 gtctctaatgag acacacatgcc agaatttggt ta  212
759 <210> SEQ ID NO: 20
760 <211> LENGTH  215
762 <212> TYPE: DNA
763 <213> ORGANISM  Rattus norvegicus
764 <400> SEQUENCE  20
766 gatccgagtg tggttccacc ctgctggctc tgtgactgcg gggcttggat ttataacagg   60
768 agaaaaaggtc ggcaggtgat cttctaggct gcaaacgggt gtctctggcc atccctggat  120
770 actgctgcgga gtggagacag cgtcttcaca gttgtacttg tagccttcac aggtcaggct  180
772 gcgtctgctc actcctgtcc attgtacgtg cgtta  215
775 <210> SEQ ID NO: 21
776 <211> LENGTH  286
777 <212> TYPE: DNA
778 <213> ORGANISM  Rattus norvegicus
780 <400> SEQUENCE  21
782 gatcctaagg gcgggtcacat ggttcctgct gaccaaggga catggctctg aagatgatga   60
784 ggctggttc tcaggcaggag tagctgagct gagctgagcctg tggaggcctg gagcctgaag  120
786 tccctggatt aggggcccagg atggcaggtgc taatgtctat ccccggcgct cttcttcccg  180
788 actctaccat gggatgtaac tccaggaccc ctgccatctc cggtaccaaa agactgtggc  240
790 ttccctgtct actcaggaaat cagttctact tcgtaaacag tgttta  286
792 <210> SEQ ID NO  22
794 <211> LENGTH  227
795 <212> TYPE: DNA
796 <213> ORGANISM  Rattus norvegicus
398 <220> FEATURE
399 <221> NAME/KEY  unsure
400 <222> LOCATION  (1)..(227)
401 <223> OTHER INFORMATION: unsure at all n locations
403 <400> SEQUENCE  22
405 gatcctaagg agtaaattga gaaaccaaga gtgggggaga tgaggcgcaa cccaagaaag   60
407 atgctgtgat ctctgaaggg acaactctaa aatcaaagtg ctggaaggtt ggctccatcc  120
W--> 409 tgagntnctc ttcgcattgc aagtgttgtg tttgtcctgt gccttatgct cttctctcat  180
```

F-YI

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY   DATE: 03/27/2001
PATENT APPLICATION: US/09/490,609B   TIME: 07:45:51

Input Set : **A:\3170SeqList.txt**
Output Set : **N:\CRF3\03272001\I490609B.raw**

```
L:109  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:134  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:136  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:167  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:186  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:223  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:246  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:297  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:316  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:409  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:22
L:426  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:453  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:463  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:482  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:539  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:568  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:627  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:35
L:662  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:783  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:44
L:802  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:45
L:819  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:46
L:836  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:47
L:877  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:49
L:896  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:902  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:919  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:921  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:936  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:52
L:940  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:52
L:942  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:52
L:957  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:53
L:959  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:53
L:961  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:53
L:976  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:54
L:980  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:54
L:997  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:55
L:999  M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:55
L:1001 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:55
L:1016 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:56
L:1020 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:56
L:1022 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:56
L:1037 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:57
L:1041 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:57
L:1043 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:57
L:1058 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:58
L:1060 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:58
L:1075 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:59
L:1077 M:341  W: (46) "n" or "Xaa" used, for SEQ ID#:59
```

VERIFICATION SUMMARY   DATE: 03/27/2001
PATENT APPLICATION: US/09/490,609B   TIME: 07:45:51

Input Set : A:\3170SeqList.txt
Output Set: N:\CRF3\03272001\I490609B.raw

L:1079 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59
L:1094 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:60